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EXAMINER

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1 RECORD OF ORAL HEARING
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3 UNITED STATES PATENT AND TRADEMARK OFFICE
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5
6 BEFORE THE BOARD OF PATENT APPEALS
7 AND INTERFERENCES
8

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10 *Ex parte* WAYNE O. DEUESCHER
11

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13 Appeal 2009-007054
14 Application 10/824,107
15 Technology Center 1700
16

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18 Oral Hearing Held: Tuesday, September 15, 2009
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21 Before JEFFREY T. SMITH, MICHAEL P. COLAIANNI and
22 JEFFREY B. ROBERTSON, *Administrative Patent Judges*.
23

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25
26 ON BEHALF OF THE APPELLANTS:
27

28 MARK. A. LITMAN
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1 The above-entitled matter came on for hearing on Tuesday,
2 September 15, 2009, commencing at 9:32 a.m., at the U.S. Patent and
3 Trademark Office, 600 Dulany Street, Alexandria, Virginia, before Kevin
4 Carr, Notary Public.

5 JUDGE SMITH: Good morning, Mr. Litman.

6 MR. LITMAN: Good morning, Your Honors.

7 JUDGE SMITH: As you know, we will be making a transcript
8 of today's proceedings that will be added to the record.

9 MR. LITMAN: That'll be fine.

10 JUDGE SMITH: Also, you have 20 minutes to present your
11 argument. After you settle in you may begin.

12 MR. LITMAN: Yes, sir. I've been a practicing attorney for 37
13 years now and I think I've got the rules down.

14 This rejection has an overwhelming failure in it from the
15 beginning. What the claimed invention is is the formation of liquid droplets
16 of a potentially abrasive material, releasing the liquid droplets while they are
17 liquid, and then hardening them while they are in a round shape. This can be
18 done either by irradiating them while they're falling in the air, dropping them
19 into an oil base and irradiating them or heating them, or a hundred different
20 methods. But the invention is taking the liquid dispersion of the solidifiable
21 material as a sphere and hardening it after it's out of the mold while it's a
22 liquid. In the mold it's liquid. Out of the mold it's a liquid as a droplet to
23 form a sphere.

1 The entire foundation of the rejection relies on the Berg patent
2 as a reference. Berg fails in every single regard with respect to teaching
3 formation of a spherical particle. It is physically impossible according to the
4 teachings of Berg to 1) form a spherical particle and 2) Berg releases a solid
5 particle out of the mold, which is the reason why it can't form a spherical
6 particle. We talk about releasing a droplet of liquid out of the mold. That is
7 in every single claim on this appeal.

8 What the Examiner has done is said because Berg has 30%
9 water in his particles, they are liquid. This absolutely contradicts specific
10 teachings of what Berg intends to do and does do. I'll point out specifically
11 for example column 4. Looking at the detailed description of the invention
12 in column 4, lines 41 through 53 particularly at the end it says, "The term
13 precursor of abrasive particle" -- and this is a term used in every claim of
14 Berg and every description of Berg -- "The term precursor of abrasive
15 particle means the un-centered particle produced by removing a sufficient
16 amount of a volatile component from the dispersion when it is in the mold
17 cavity to form a solidified body having the shape corresponding
18 approximately to the shape of the mold cavity." Forming a solidified body.

19 This exact type of language is again repeated on column 7 in
20 even stronger terms. In column 7 line 14, "A sufficient amount of a volatile
21 component must be removed from the dispersion to bring about
22 solidification thereof, thereby forming a precursor of an abrasive particleY"
23 dada dada. The precursor of an abrasive particle was also previously defined
24 as solid.

1 So Berg is clearly dealing in the formation of a solid particle in
2 the mold, and in releasing the solid particle from the mold. Looking at the
3 figures of Berg, particularly where it's most clearly shown in perspective as
4 in FIG. 2 you can see is what Berg has is a flat plate with an etched shape
5 therein. He puts the dispersion into those openings, solidifies it within the
6 openings -- they tend to shrink as much as 20% according to Berg -- turns
7 them all over and dumps them out and the particles come out as solids. Berg
8 also specifically states elsewhere in the specification at column 10, lines 12
9 to 20, even though he's talking about shapes -- triangular, rectangular,
10 circular, elliptical or the like -- this is the cross-section. And he says in that
11 particular area as a front face, and a back face, which are the same. Meaning
12 they are flat because he's using a flat mold. You cannot put a liquid into a
13 mold, and he scrapes the surface of it to keep it level, and have anything but
14 at least one surface of that material flat. He cannot make a sphere. Plus he
15 hardens the material within the mold. That is exactly the opposite of what is
16 claimed in the present invention.

17 If you look at our description, the first claim that is on appeal
18 that has not been withdrawn states ejecting the liquid mixture volume from
19 the cell sheet --

20 JUDGE SMITH: Excuse me, Mr. Litman. Where in your
21 specification do you make this description of liquid volume mixtures as
22 being ejected?

23 MR. LITMAN: Unfortunately, I do not have the specification
24 with me but everywhere in the invention, including the examples we talk

1 about -- All right for example original claim 2. The cell sheet holes from
2 cell sheet volumes is recited. Mixing materials into a liquid solution, putting
3 the liquid solution into the cell sheet holes to form the liquid mixture
4 solution to form mixture volumes. This language is also literally in the
5 specification itself. They're in the original claims as filed also.

6 JUDGE SMITH: I noticed that the word liquid was added by
7 amendment, is that correct?

8 MR. LITMAN: Yes, to emphasize more clearly what was
9 being done. But in the original claims as filed liquid was there. If you look
10 at claim 4 for example, "Where in the solidification environment after it has
11 been removed from the mold is a dehydrating liquid." But liquid was added
12 in the prosecution to assure that we are absolutely clear in distinguishing
13 what is going on here. The fact of the matter is we are talking about forming
14 a spherical particle. It's impossible to form a spherical particle from the
15 liquid dispersion without it becoming a droplet at some point, unless
16 somehow or another you dye mold from two sides a single droplet -- and we
17 are talking about micron sub millimeter sized particles -- so it's an absurd
18 process to even think of it.

19 But again getting back to the claim, ejecting the liquid mixture
20 volume from the cell sheet by subjecting the liquid mixture volume
21 contained in each cell to an impinging jet of fluid. Berg also teaches
22 solidifying the particles in the mold and then it shrinks, and then it falls out.
23 Column 10, lines 2 through 6. Berg is doing everything with a solid material
24 to form the particle. Berg's process, which is the basis of the rejection,

1 cannot do what we say is forming a sphere, number one. Number two; Berg
2 has the liquid solidified in the mold. Our claims require ejecting the liquid
3 mixture volume from the mold. Two totally incompatible events.

4 If you ejected material from Berg you would not be forming the
5 specific materials he's intending to form which are shaped, abrasive
6 particles. A defined cross-section, even when those cross-sections are round
7 or circular, he does not have a sphere. He cannot form a sphere looking at
8 FIG. 2. He talks about a "truncated sphere", but what that is is a disc -- a
9 segment taken out of the sphere. It's flat on two sides. It is not a sphere. It's
10 a disc. Our terms are limited to a sphere.

11 The Examiner attempts after this aggressive extension of the
12 teachings of Berg -- Let's get to the point where the Examiner says, "all
13 materials having 30% water are liquid." That is false. Common chemical
14 knowledge will show you that even hydrated salts, which are solid, and have
15 35% water in them. Having water in it does not make it a liquid. Jell-O has
16 90% water in it. It's a gel; exactly what Berg also forms. It is not a liquid.
17 It is a gel. It is not a liquid. It is absolutely clear that in no way does the
18 argument that the Examiner says that what Berg is using after his hardening
19 is a liquid. It's impossible. Berg says solidifying the material, and then
20 grinding the material. I can conceive of no way of grinding water. It's like
21 pushing rope -- it's just not going to work.

22 The Examiner then cites Zhai as teaching an inherency of
23 sphericity in Berg. It's impossible. Berg clearly has no spheres. Zhai shows
24 a totally different process of what is known as prilling -- spraying liquid into

1 the air to dehydrate them to form spheres. Berg is not forming spheres, does
2 not want to form a sphere and even talks about the fact of what should be
3 avoided in the process as having rounded edges. This is specifically
4 addressed later on when he states it is important to avoid excessive rapid
5 drying of the particle because that would cause edges to break off and
6 become rounded. Column 7, lines 39 through 45.

7 So Berg is particularly avoiding rounding of edges because he
8 wants an abrasive face or edge to work with. So even if Zhai were
9 meaningful with regard to what Berg teaches, Berg is a failure. To say okay
10 let's eliminate the process of Berg and prill the materials that he has and
11 form pelletized particles, it's totally different than what Berg has. More
12 importantly when you prill -- when you spray in the air, you get a large
13 distribution of droplet sizes.

14 The whole purpose of our process is to form uniform particle
15 spherical sizes. By taking a screen, pressing liquid through it, having
16 droplets come out through uniform openings in the screen, you get fairly
17 uniform droplets coming out. If you prill -- which has nothing to do with
18 Berg whatsoever and goes directly against the teachings of Berg, and cannot
19 be combined with them -- you would get these non-uniform droplets. Then
20 you end up with large particles that are wasted and even more small particles
21 are wasted. And with the present technology, particularly when we're
22 dealing with something like diamond grade abrasive particles, where you
23 have diamond material in with the spheres, you're not going to want to waste
24 it and have that kind of wastage.

1 More importantly Zhai teaches nothing that can be used with
2 Berg. Berg forms particles in a flat mold to get specific shapes. That's the
3 purpose of the invention. You destroy the invention of Berg by attempting
4 to prill. And even if you do prill and spray droplets, you get a wide range of
5 dispersion of particle sizes. If the Examiner is attempting to argue that gels
6 are liquids, this is not the case, as we all know. Literature citation has been
7 provided on that basis which is well known in the art.

8 JUDGE SMITH: It's noted that you cited several references in
9 your Brief that were not submitted in the evidence appendix, is that correct?

10 MR. LITMAN: That's correct. They were not as prior art as
11 such but merely to show the common definition of terms. Zhai cannot
12 establish any basis for inherency and is also incompatible with the teachings
13 of Berg. The one thing that I absolutely want to get across is and I think I've
14 mentioned it is the fact that Berg requires solidification of his material
15 within the mold. It's a sine qua non in the performance of the Berg
16 invention. Every claim we have on appeal talks about hardening a droplet of
17 liquid into a sphere. Mixing materials into a liquid and ejecting the liquid
18 mixture volumes. That's inherent language. We create a liquid mixture. We
19 have a volume within the cells. We eject the liquid mixture from that
20 volume. It's not a novel combination of technical terms as such. It's
21 describing the physical event. And all of these are clear, non-technical
22 terms. A liquid mixture in a volume is ejected. That is all it is.

1 JUDGE SMITH: In its simplest form what you're saying is it's
2 like dropping water out of a medicine dropper. If you take one drop it's
3 going to eject and a sphere is going to form.

4 MR. LITMAN: Yes. Except here we have cell sheets with
5 holes in it.

6 JUDGE SMITH: Right.

7 MR. LITMAN: We are getting a lot of droplets coming out
8 with uniform holes in these cells, and getting uniform droplets. And in this
9 way you can make rapidly large numbers of uniform, spherical particles.

10 JUDGE SMITH: So if you will, your similarity to Berg is that
11 you both have cell sheets however the material that's going inside of Berg
12 solidifies before exiting versus yours being in a liquid state upon exit.

13 MR. LITMAN: Because he wants, as a purpose of his
14 invention, to form a shaped particle -- a specified shape. And that specified
15 shape is given in the mold. If you use a mesh screen, you could have square
16 holes. But when you push the droplets through, they will by natural surface
17 tension, form a sphere. So in our process it isn't even necessary to have a
18 round hole or a mesh with circular holes in it. They could be square. They
19 can be triangular. It will still form a spherical particle. Because the purpose
20 of the invention is to have that liquid by its own surface tension form a
21 sphere. That is what is so critical about the failure of Berg. Because he
22 hardens in the mold, and when he shakes it out of that mold he cannot form a
23 sphere. It's already hard.

1 JUDGE SMITH: Is there any other argument that you would
2 like to present? I noticed that there are numerous rejections and Berg is in
3 every single one of them.

4 MR. LITMAN: I think that alone fully defines the underlying
5 failure. No other reference is cited, except for Zhai, which I addressed, as
6 trying to show sphericity. And the fact is if you take the knowledge of Zhai
7 and try to apply it to Berg you destroy the Berg patent. You cannot prill and
8 practice Berg.

9 JUDGE SMITH: Are there any other questions? No other
10 questions.

11 MR. LITMAN: Thank you very much.

12 (Whereupon, at 9:54 a.m., the proceedings were concluded.)